Reducing Road Traffic Accident: Rapid Evidence Synthesis for Low and Middle Income Countries

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Abstract : Globally, road traffic accident (RTA) is causing millions of deaths and injuries every year. It is one of the leading causes of death among people of all age groups and the problem is worse among young reproductive age group. Moreover the problem is increasing with an increasing number of vehicles. The majority of the problem happen in low and middle income countries (LMIC), even if the number of vehicles in these countries is low compared to their population. So, the objective of this paper is to summarize the best available evidence on interventions that can reduce road traffic accidents in low and middle income countries (LMIC). Method: A rapid evidence synthesis approach adapted from the SURE Rapid Response Service was applied to search, appraise and summarize the best available evidence on effective intervention in reducing road traffic injury. To answer the question under review, we searched for relevant studies from databases including PubMed, the Cochrane Library, TRANSPORT, Health system evidence, Epistemonikos, and SUPPORT summary. The following key terms were used for searching: Road traffic accident, RTA, Injury, Reduc*, Prevent*, Minimiz*, "Low and middle-income country", LMIC. We found 18 articles through a search of different databases mentioned above. After screening for the titles and abstracts of the articles, four of them which satisfy the inclusion criteria were included in the final review. Then we appraised and graded the methodological quality of systematic reviews that are deemed to be highly relevant using AMSTAR. Finding: The identified interventions to reduce road traffic accidents were legislation and enforcement, public awareness/education, speed control/ rumble strips, road improvement, mandatory motorcycle helmet, graduated driver license, street lighting. Legislation and Enforcement: Legislation focusing on mandatory motorcycle helmet usage, banning cellular phone usage when driving, seat belt laws, decreasing the legal blood alcohol content (BAC) level from 0.06 g/L to 0.02 g/L bring the best result where enforcement is there. Public Awareness/Education: focusing on seat belt use, child restraint use, educational training in health centers and schools/universities, and public awareness with media through the distribution of videos, posters/souvenirs, and pamphlets are effective in the short run. Speed Control: through traffic calming bumps, or speed bumps, rumbled strips are effective in reducing accidents and fatality. Mandatory Motorcycle Helmet: is associated with reduction in mortality. Graduated driver's license (GDL): reduce road traffic injury by 19%. Street lighting: is a low-cost intervention which may reduce road traffic accidents.

Keywords : evidence synthesis, injury, rapid review, reducing, road traffic accident

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